

REMARKS

The Examiner is thanked for the interview several weeks ago. During the interview, claim language was discussed. In particular, adding the term “skeletal system” to the claims to further define what is meant by “enclosureless.” It was tentatively agreed upon that this language would strengthen what is meant by enclosureless. The Examiner also directed the undersigned to additional references: U.S. Pat. No. 6,509,981 and U.S. Pat. No. 6,301,098. A discussion of these references may be found below.

In the Office Action, the Examiner rejected claims 25-29 and 31-36 under 35 USC 103 and claims 25-36 under 35 USC 112. The rejections are fully traversed below.

Claim 32 has been amended. Claims 1-24 and 37-59 have been cancelled. Claims 60-73 have been added. Thus, claims 25-36 and 60-73 are pending in the application. Reconsideration of the application is respectfully requested based on the following remarks.

Election/Restriction

The undersigned acknowledges that claims 1-24 and 37-59 have been withdrawn from consideration. These claims have been cancelled.

Information Disclosure Statement

A legible copy of “Panasonic Toughbook 28” is enclosed herewith.

ISSUES UNDER 35 USC 112(1)

Claims 25-36 have been rejected under 35 U.S.C. §112, first paragraph, because the specification, while being enabling for a portable computer comprising a base having a casing and a chassis, does not reasonably provide enablement for an enclosureless optical disk drive.

The Examiner asserted that the Applicants claimed an enclosureless optical disk drive while disclosing and claiming an optical disk drive having an enclosure in that the optical disk drive has a frame component (248) having a base member (25) and a top cover (525).

The Applicants respectfully disagree. Enclosureless optical disk drive is defined in the specification as an optical disk drive that does not include its own housing. By way of example, on page 8, line 11, the specification reads, "By enclosureless, it is meant that the optical disk drive does not include its own housing," and on page 22, line 9, the specification reads, "By enclosureless, it is meant that the CD/DVD drive does not include its own housing and thus it is thinner, lighter and cheaper than conventional CD/DVD drives." While the enclosureless drive does not include a housing it does include frame components (see page 22, line 11). The frame components are needed to structurally support the drive components. The frame components may also provide some covering. This covering, however, does not enclose the drive, it leaves a lot of openings. As stated on page 22, line 15, "The frame components typically take the form of skeletal system and therefore there are many openings surrounding the drive components." Because of the openings, the frame components do not enclose or house as do the housings and enclosures of conventional drives. As should be appreciated, the housings and enclosures of conventional drives surround the entire periphery of the drive thereby serving as a barrier that protects the drive components contained therein. By way of example, and referring to Col. 3, lines 60-65 of *Chee*, "The housing 202 includes a base 210 and a top 212.... The top 212, coupled with the base 210 and a perimeter gasket 211, provide a sealed internal environment for the disc drive 200." The frame components simply do not provide a sealed internal environment like conventional housings such as the housing 202 of *Chee* and thus the drive of the present invention is enclosureless. Accordingly, it is believed that the rejection be withdrawn.

ISSUES UNDER 35 USC 103(a)

Claims 25-28 and 32-36 have been rejected under 35 U.S.C. §103(a) as being unpatentable over *Nakajima* (US 5,715,139) in view of *Forlenza et al.* (US 6,392,880).

Neither reference teaches or suggests “an enclosureless drive” let alone “an enclosureless optical drive” as required by claim 25. With regards to *Nakajima*, *Nakajima* does not teach or suggest a floppy disk drive 50 that is enclosureless. In *Nakajima*, the floppy disk drive 50 includes a casing and therefore it is not enclosureless. *Nakajima* states, “As shown in Fig. 11, the FDD 50 has a boxed shaped casing 51 (Col. 8, lines 57-58).” With regards to *Forlenza*, *Forlenza* fails to disclose an enclosureless media bay unit and more particularly an enclosureless CD/DVD unit 88. *Forlenza* is completely silent to an enclosureless CD/DVD unit 88. Since *Forlenza* is silent on this issue, it can only be assumed that *Forlenza*’s media bay units and more particularly the CD/DVD unit 88 are housed within their own enclosure as is generally well known in the art. Up to the point of this invention, those skilled in the art installed CD/DVD drives, which have their own enclosure, into the base of the portable computer. As discussed in the background of the present invention, this technique unfortunately leads to redundant features. That is, the drive components of the CD/DVD drive are disposed inside a double box, i.e., an enclosure inside an enclosure, and therefore they have double features that serve the same purpose. This is one problem that the present invention is trying to overcome. As stated in the background of the present invention, “While double protection may sound good, the double box tends to add unnecessary mass, volume and expense to the portable computer. These are undesirable traits that go against the current trend to make portable computers cheaper, thinner and lighter. The extra layer of material may also inhibit the dissipation of heat from the drive components...” In the case of *Nakajima*, the FDD 50 is encased in casing 51 and the casing 51 is surrounded by portions of the portable computer thereby forming a double box (See Cols. 9 and 10, lines 66-24). In the case of *Forlenza*, the CD/DVD unit 88 more than likely includes its own housing and this housing is installed into the auxiliary component housing 50 thus forming a double box.

Support for enclosureless can be found in the specification on page 22, first full paragraph, “By enclosureless, it is meant that the CD/DVD drive does not include its own housing and thus it is thinner, lighter and cheaper than conventional CD/DVD drives.” While the optical disc drive may not include a housing (in the present invention), it does include frame

components that consist of structural members that support the drive components. The frame components typically take the form of a skeletal system and therefore there are many openings surrounding the drive components. These openings may allow the passage of undesirable electronic emissions and unwanted loose particles (dust) and therefore portions of the base are thus configured to house the enclosureless optical disc drive. In order to expedite the prosecution of this case, claim 25 was amended to include language directed at the skeletal system "the frame components taking the form of a skeletal system". No such system is described in the cited art. In claim 25, the "chassis" and the "casing" provide the enclosure for the enclosureless optical disc drive (e.g., the "enclosed region") thereby "shielding the enclosureless optical disc from internal and external hazards" while preventing the unwanted double box. Accordingly, the rejection is unsupported by the art and should be withdrawn.

The rejections to the dependent claims should be withdrawn for at least the same reasons as above. The dependents also have additional features that are not taught by the cited references. For example, none of the references teach or suggest, "wherein the frame component includes a bottom plate and a top plate, the top plate being attached to the bottom plate via a plurality of structural arms extending therebetween, the bottom plate being configured to support the drive components, and the top plate being configured in part to block laser light from emitting from the enclosureless optical disc drive" as required by claim 30, "wherein the internal portions of the casing and chassis that form the enclosed region are configured to shield electronic emissions therein," as required by claim 31, "wherein the enclosed region shields the enclosureless optical disc drive from dust," as required by claim 33, "wherein the enclosed region shields laser emissions," as required by claim 34, and "wherein the CD/DVD drive is a slot loaded CD/DVD drive," as required by claim 36.

With regards to claim 36, the Applicants disagree with the Examiner's assertion that it would have been obvious to one skilled in the art to select a slot loaded CD/DVD drive as the apparatus of Nakajima has a slot (54) for loading a disk therein and that one skilled in the art would not be motivated to destroy the slot structure of Nakajima to provide the portable computer (1) with a tray loaded CD/DVD drive. First, floppy drives are completely different than CD/DVD drives thus one skilled in the art would simply not select a CD/DVD drive to replace a floppy drive. Second, according to the undersigned those skilled in the art have always put tray loaded CD/DVD drives in portable computers and thus it is believed that they would destroy the slot structure of *Nakajima* to provide the portable computer with a tray loaded

CD/DVD drive. The Applicants respectfully request the Examiner to provide prior art that shows a slot loaded CD/DVD drive in a portable computer in order to maintain the rejection. This simply has not been done in the past.

Claim 29 has been rejected under 35 U.S.C. §103(a) as being unpatentable over *Nakajima* as modified by *Forlenza* et al. as applied to the claims above, and further in view of *Chee* et al (US 6,324,054).

The rejections to claim 29 should be withdrawn for at least the same reasons as above. That is, *Chee* does not overcome the deficiencies of *Nakajima* and *Forlenza*. All the references fail to teach or suggest “an enclosureless optical disc drive” as well as “a skeletal system” as required by claim 25 from which claim 29 depends. Even though this is the case, it is still believed that *Chee* fails to disclose “a thin flexible boot configured to surround at least a portion of the enclosureless optical disc drive so as to prevent particles from reaching the drive components,” as required by claim 29. That is, while *Chee* may disclose a shock absorbing material 300, *Chee* does not teach or suggest a thin flexible boot or a boot that prevents particles from reaching the drive components. For one, *Chee* is silent to preventing particles from reaching the drive components via the shock absorbing material 300, i.e., the disc drive apparatus 200 already includes a housing 202. For another, the shock absorbing material is used to prevent shocks and vibrations and thus it seems a certain thickness is needed, and weight is of no concern (e.g., formed from rubber). As should be appreciated, this goes against the trend in portable computers (thin and light). Accordingly, the rejection is unsupported by the art and should be withdrawn.

Claim 31 has been rejected under 35 U.S.C. §103(a) as being unpatentable over *Nakajima* as modified by *Forlenza* et al. as applied to the claims above, and further in view of *Smith* et al (US 6,122,167).

The rejection to claim 31 should be withdrawn for at least the same reasons as above. That is, *Smith* does not overcome the deficiencies of *Nakajima* and *Forlenza*. All the references fail to teach or suggest “an enclosureless optical disc drive” as required by claim 25 from which claim 31 depends.

New Art 6,301,098 to *Kim* and 6,509,981 to *Shih*.

These references do not overcome the deficiencies of the cited art. Neither reference teaches or suggests, "an enclosureless optical disc drive" as required by claim 25. *Shih* discloses a fixed housing 2 and thus does not disclose an enclosureless optical drive as the housing 2 provides an enclosure to the device 1. Furthermore, *Shih* teaches away from the present invention by teaching a double box. *Shih* states, "the media access device 1 comprises a fixed housing 2 mountable into a floppy bay within a computer...(Col. 2, lines 32-35)." As should be appreciated, mounting a fixed housing into a floppy bay of a computer creates a double box. *Kim* discloses a digital video disk player 160 with its own housing (no reference number). The housing encloses the mounting part 162, which appears to be a tray for receiving a DVD. As shown in Fig. 3, the mounting part 162 is contained in the housing of the digital video disk player 160 and thus *Kim* does not disclose an enclosureless digital video disk player 160.

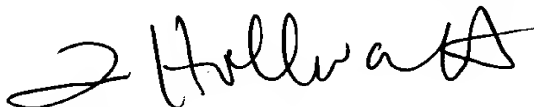
Allowable Subject Matter

Claim 30 is believed to be in a condition for allowance since the Applicants showed support for the elements described in claim 30 for which the 112(1) rejection was given. Claim 30 was not rejected on any other grounds.

SUMMARY

Applicants believe that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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